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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/750,317 | 12/29/2000 | Robert Walter Schreiber | 52817.000123 | 6993 |

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| EXAMINER |
|---|
| VEILLARD, JACQUES |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2175 | 12 |

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

| **Office Action Summary** | Application No<br>09/750,317 | Applicant(s)<br>SCHREIBER, ROBERT WALTER |
| | Examiner<br>Jacques Veillard | Art Unit<br>2175 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _18 June 2003_ .

2a)☐ This action is **FINAL**.          2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-40_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-40_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _11 ; 13_
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

1.   This action is responsive to the Applicant's amendment filed on 6/18/2003.

2.   Claims 1-3, 5, 8, 9, 11-17, 15, 18, 19, 21-23, 25, 28, 29, 31-33, 35, 38, and 39 have been amended upon this amendment.

3.   Claims 1-40 are pending and presented for examination, in which claims 1, 11, 21, and 31 are the independent claims. Others are the dependent claims.


*Response to Arguments*

4.   Applicant's arguments filed on June 18, 2003 have been fully considered but they are not persuasive for the reasons set forth below.


5.   Examiner has completed a through study of the applicant's arguments (paper No. 10). In page 9, Applicant argued that the cited prior art (Shibamiya US Pat. No. 4,956,774) does not teach or suggest the features of "receiving a request for data associated with a requested hierarchical data list, wherein the request includes a predetermined tolerance and predetermined units, and wherein the step of determining comprises determining a first statistical curve for the requested hierarchical data list" as recited in claims 1, 11, 21, and 31.

In response to the applicant's argument, the Examiner respectfully disagrees with the preceding argument because the Applicant fails to appreciate the breadth of the claims. In particular, Shibamiya teaches a database optimizer using most frequently values statistic wherein an estimate requirement to use the index as the access part is made as the basis for selecting an access for the query which clearly correspond to a request for accessing data which was been

received (See col.4, lines 35-63, and col.5, lines 11-14). Shibamiya achieved the limitations of "a

predetermined tolerance and predetermined units" by teaching a range of values which

correspond to a tolerance of set of values that collects frequency of occurrence statistics about

the most frequent values appearing within the column of an index (See col.5, lines 16-18 and

col.6, 17-19). Furthermore, Shibamiya teaches a database wherein the query's search criteria

specify values, which are assumed to be uniformly distributed (See abstract lines 10-13, col.3,

lines 23-45). Since all uniform distribution values in statistic correspond to a curve, we assume

therefore, that Shibamiya teaches a statistical curve as claimed.

In page 10, Applicant argued that the cited prior art (Shibamiya US Pat. No. 4,956,774)

does not represent "a statistical curve for the request data" as claimed. The Examiner respectfully

disagrees with the preceding argument because Shibamiya teaches a method wherein the most

frequent occurring values data are assumed to be uniformly distributed (See abstract lines 10-13).

Since all uniform distribution values in statistic correspond to a curve, we assume therefore, that

Shibamiya teaches a statistical curve as claimed.

Therefore, the Examiner asserts that the cited prior art (mainly Shibamiya) teaches or

suggests the subject matter broadly recited in claims 1, 11, 21, and 31 as required. (See rejections

of claims 1-40 as set forth below).

### Claim Rejections - 35 USC § 103

6.        The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject

matter sought to be patented and the prior art are such that the subject matter as a whole
would have been obvious at the time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains. Patentability shall not be negatived
by the manner in which the invention was made.

7.       Claims 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibamiya et

al. (U. S. Pat. No. 4,956,774, hereinafter Shibamiya).

.        As per claims 1, Shibamiya teaches a database method optimizer using most frequency

values statistics for statistical matching (See col.5, lines 3-7). Similarly, the method taught by

Shibamiya comprising the steps of: receiving a request for data associated with a requested

hierarchical data list (See col.4, lines 35-63, and col.5, lines 11-14), wherein the request includes

a predetermined tolerance and predetermined units (See Fig.1, elements 12, and 16, col.3, line 66

through col.4, line 5, col.5, lines 16-18, and col.6, lines 17-19); searching at least one object store

having at least one stored hierarchical data list (See col.2, lines 34-50, and col.25, line 52

through col.26, line 10) for data that matches the data associated with the requested hierarchical

data list (See Col.1, lines 48-50, col.2, lines 34-38, and col.5, lines 3-7); determining whether the

at least stored hierarchical data list satisfies the request (See col.6, lines 8-15, col.26, lines 11-47,

and col.27, line 60 through col.28, line 2); and wherein the step of determining comprises

determining a first statistical curve for the first hierarchical data list (See abstract lines 10-13,

col.3, lines 23-45). Since all uniform distribution values in statistic correspond to a curve, we

assume therefore, that Shibamiya teaches a statistical curve as claimed, and Fig.2, which

represents a histogram of the actual distribution index key values).

These passages of Shibamiya are not explicitly about hierarchical data. However,

Shibamiya teaches a method suggesting a B-tree for storing index's pages (See col.1, lines 64-

67).

It would have been obvious for one ordinary skill in the art at the time of the invention to modify the Applicant's teachings by the teachings of Shibamiya because Shibamiya provides an optimizer estimation using mathematical formulas that require the statistical information as input, wherein the calculation that the mathematical formulas define make certain assumption about the interpretation of the statistical information in order to determine a statistical curve.

As per claims 11, 21, and 31, the claims have substantially the same limitations as claim 1. These limitations have already been addressed in the rejection of claim 1 above. Therefore they are rejected on similar grounds corresponding arguments given above for rejected claim 1.

As per claims 2, 12, 22, and 32, Shibamiya teaches an optimizer database using most frequent values statistics wherein the query's search criteria specify values which are assumed to be uniformly distributed (See abstract lines 10-13, col.3, lines 23-45). Since all uniform distribution values in statistic correspond to a curve, we assume therefore, that Shibamiya teaches a statistical curve and from the given data a second statistical curve can be determined (See Fig.2, which represents a histogram of the actual distribution index key values, from which a second statistical curve can be determined).

As per claims 3, 13, 23, and 33, Shibamiya teaches the claimed invention limitations, wherein the step of determining whether the at least one stored hierarchical data list satisfies the request comprises determining an overlap of the first statistical curve and the second statistical curve (See col.28, lines 41-67 to col.29, lines 1-7). Shibamiya shows that there is an overlapping of data between two tables T1 and T2.

As per claims 4, 14, 24, and 34, Shibamiya teaches the claimed invention limitations, further comprising the step of converting the predetermined units to other units (See col.29, lines 9-32).

As per claims 5, 15, 25, and 35, Shibamiya teaches the claimed invention limitations, further comprising the step of presenting the second hierarchical data list that satisfies the request (See col.26, lines 11-47, and col.27, line 60 through col.28, line 2).

As per claims 6, 16, 26, and 36, Shibamiya teaches the claimed invention limitations, further comprising the step of presenting a match result notification (See col.2, lines 34-38, and col.5, lines 3-5).

As per claims 7, 17, 27, and 37, Shibamiya teaches the claimed invention limitations, further comprising the step of presenting a non-match result notification (See col.29, lines 60-67).

As per claims 8, 18, 28, and 38, Shibamiya teaches the claimed invention limitations, further comprising the step of indicating a closeness of the second hierarchical data list satisfying the request (See col.5, lines 3-7, col.6, lines 8-15, and col.26, lines 11-33). Shibamiya shows by the percentage frequencies of occurrence how close is the matching that satisfies the request query.

As per claims 9, 19, 29, and 39, Shibamiya teaches the claimed invention limitations, wherein the statistical curve is based on a normal distribution (See Abstract, lines 10-13, col.16, lines 61-62, and col.25, lines 20-65).

As per claims 10, 20, 30, and 40, Shibamiya teaches the claimed invention limitations, wherein the predetermined tolerance is set by a system administrator (See col.26, lines 21-27, and col.29, lines 13-32). Shibamiya teaches a range of values equivalent to a tolerance of set of values assuming entering by a human operator.

## *Other Prior Art Made of Record*

8.      Ostrovsky et al.              U. S. Pat. No. 6,226,640,

        Lindsay et al.               U. S. Pat. No. 5,542,089,

        Das et la..                  U. S. Pat. No. 6,470,330, and

        Cohen                        U. S. Pat. No. 5,752,241.

## *Conclusion*

I.      The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1.      **Any response to this action should be mail to:**

        Commissioner of Patent and Trademarks

        Washington, D.C. 20231

**Or faxed to:**

        (703) 746-7239 (for formal communication intended for entry)

**Or:**

        (703) 746-7240 ( for informal of draft communications, please label

"PROPOSED" or "DRAFT")

Hand - delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington.

VA, Fourth Floor Lobby (Receptionist Telephone No. (703) 305-3900).


II.      Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jacques Veillard whose telephone number is (703) 305-7094. The

examiner can normally be reached Monday through Friday from 9:30 AM to 4: 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dov Popovici, can be reached on ( 703) 305-3830. The fax phone number for this

group is (703) 308-5403.

**CHARLES RONES**
**PRIMARY EXAMINER**

Jacques Veillard
Patent Examiner TC 2100

August 26, 2003